

COMPACT DISC PLAYER

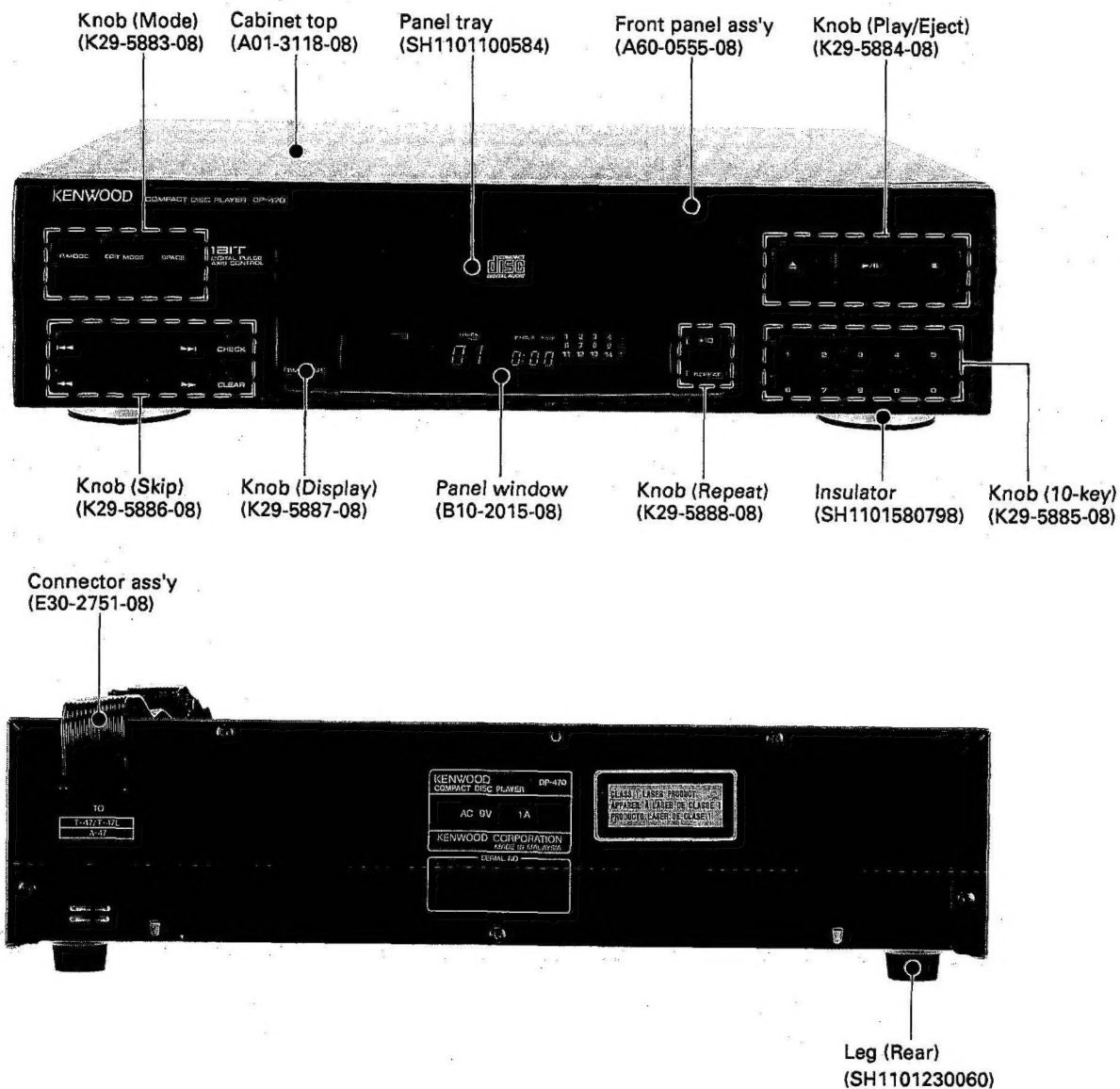
DP-470

SERVICE MANUAL

(System K-66, MIDI M-47)

KENWOOD

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B51-4794-00(O) 2568



In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter I, Subchapter J.

DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.

DP-470

CONTENTS/ACCESSORIES

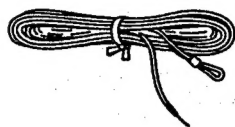
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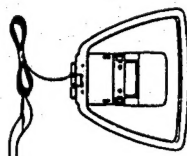
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ACCESSORIES

- FM indoor antenna 1
(SH1105020014)



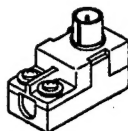
- Loop antenna 1
(SH1105020020)



- Remote control unit 1
(W03-4603-08)



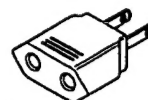
- Antenna adaptor (75 Ω /300 Ω) 1
(SH1105240051)



- Batteries (R6/AA) 2
(-)



- AC plug adaptor (M type only) 1
(SH1305240053)



(Except for some areas)
For the unit with a European AC plug in
areas other than Europe.

All accessories are packed with X-47.

M, X type

System name	Tuner	Amp	Cassette deck	CD player	Speaker
K-66	T-47	A-47	X-47	DP-470	LS-47

T, E type

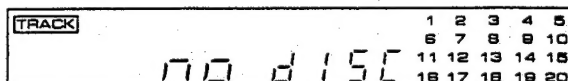
System name	Tuner	Amp	Cassette deck	CD player	Speaker
MIDI M-47	T-47L	A-47	X-47	DP-470	LS-47

Option	Graphic equalizer
	GE-470

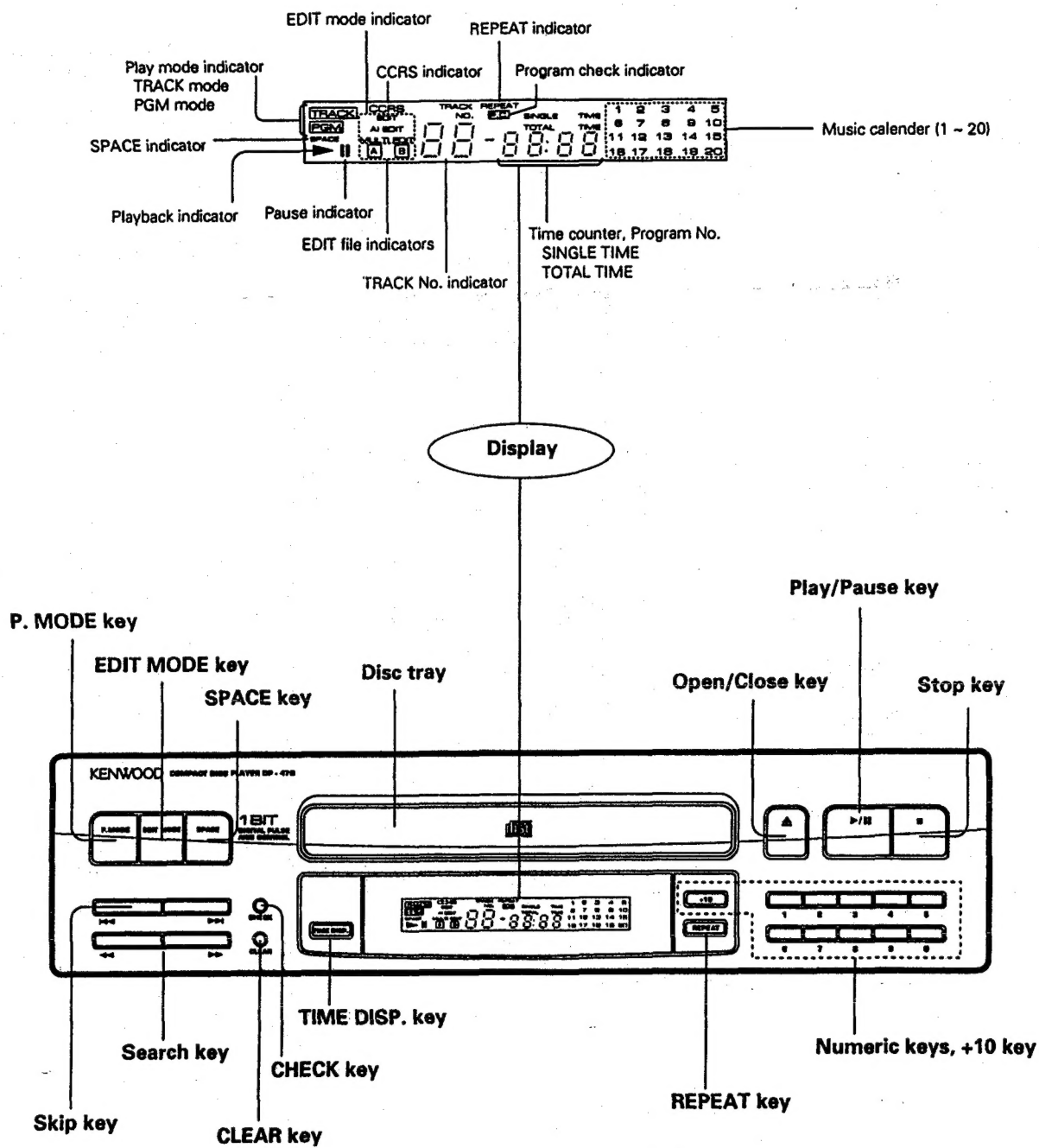
Note related to transportation and movement

Before transporting or moving the CD PLAYER, carry out the following operations.

1. Turn the power ON but do not load a disc.
2. Wait a few seconds and verify that the display shown appears.
3. Turn the power OFF.

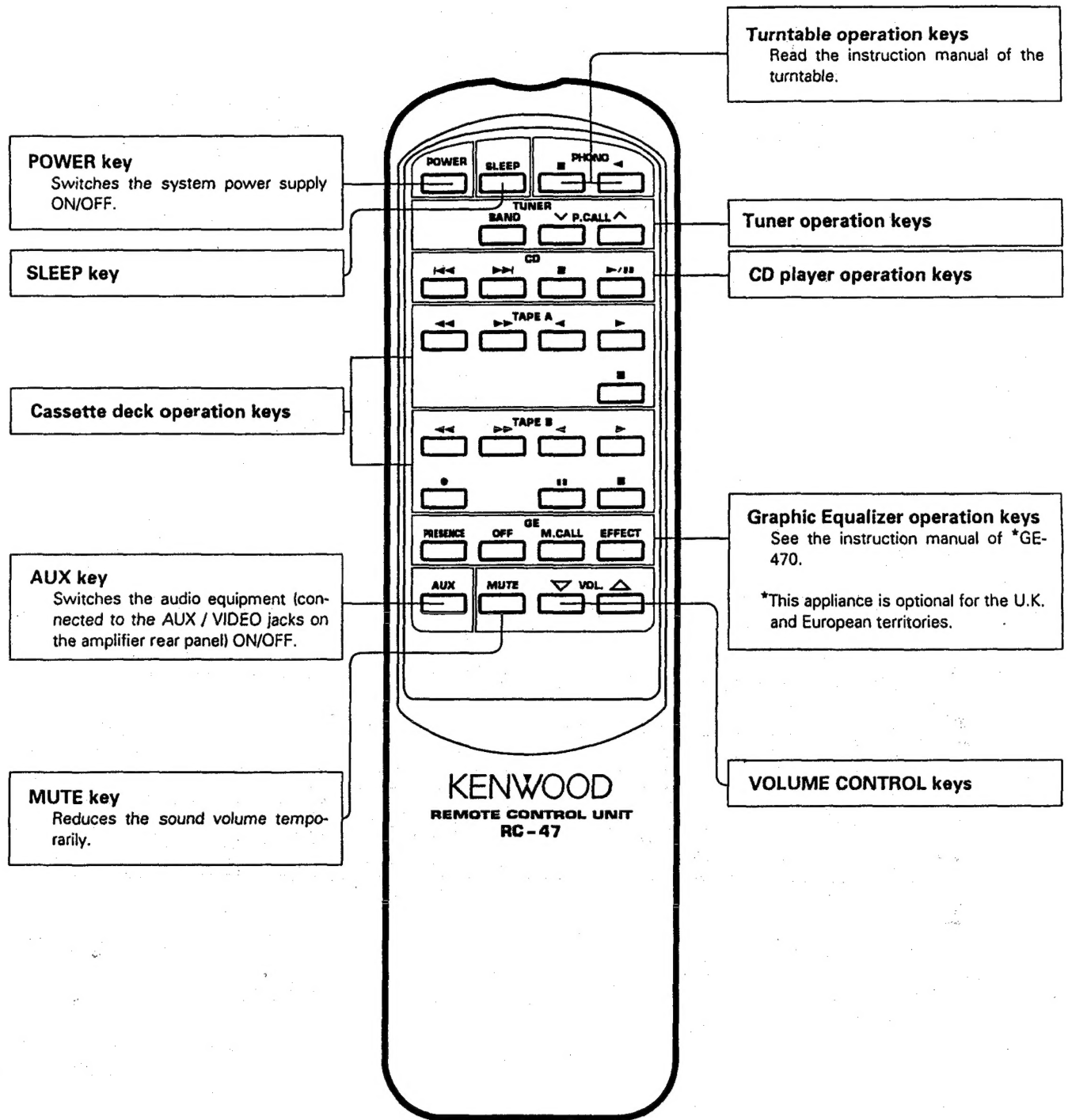


CONTROL



DP-470

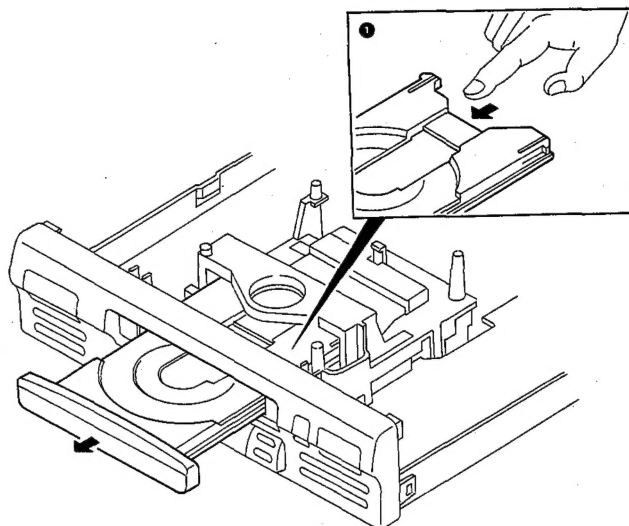
REMOTE CONTROL



DISASSEMBLY FOR REPAIR

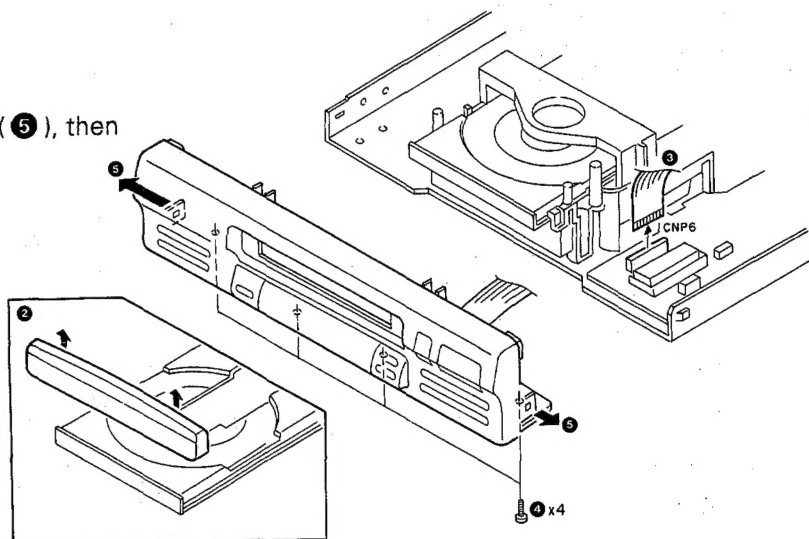
1. When not coming out the tray under normal operation

1. Press the tray slowly by hand (①).



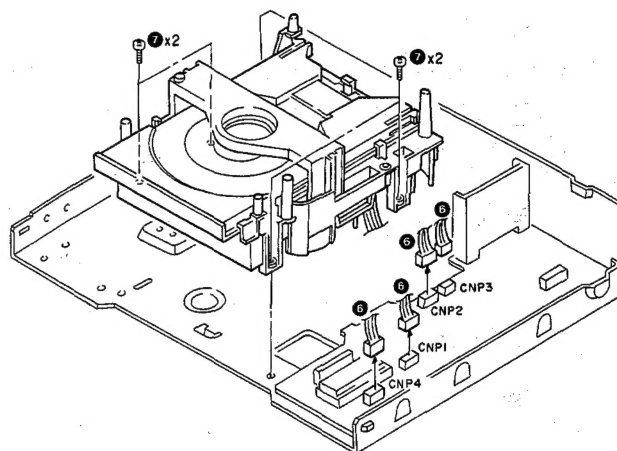
2. Removing the front panel

1. Remove the tray panel (②).
2. Disconnect the flexible cord (③).
3. Remove the 4 screws (④).
4. Remove the panel-catches from chassis (⑤), then remove the front panel.



3. Removing the mechanism ass'y and that tray

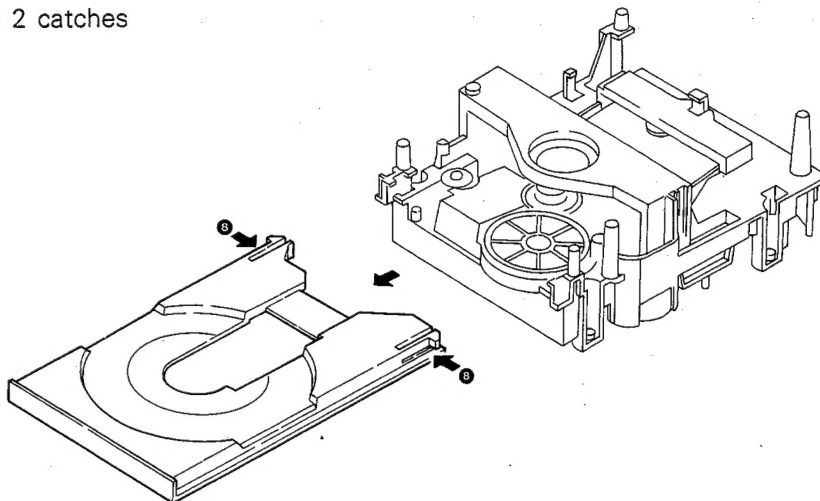
1. Disconnect the 4 connectors (⑥).
2. Remove the 4 screws (⑦), then remove the mechanism ass'y.



DP-470

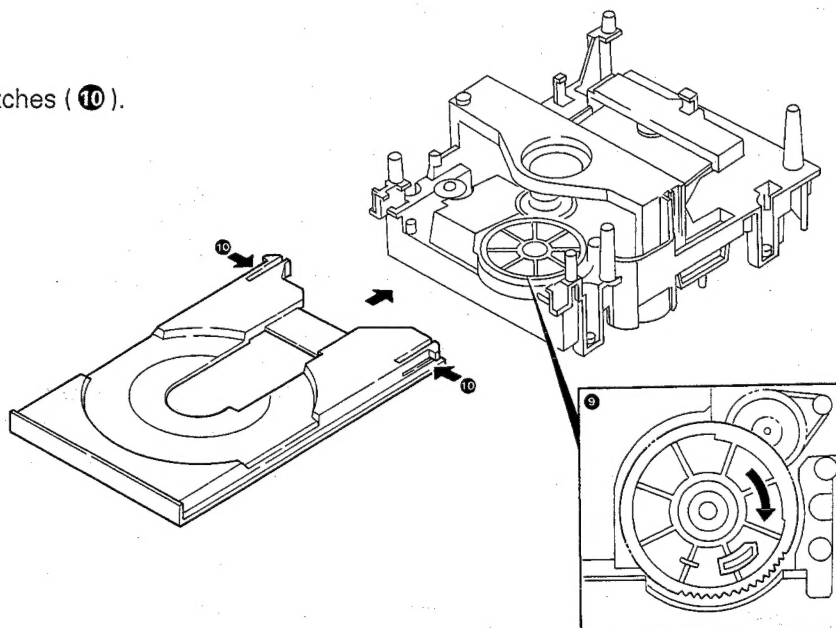
DISASSEMBLY FOR REPAIR

3. Slide the tray front-wards, remove the 2 catches (8), then remove the tray.



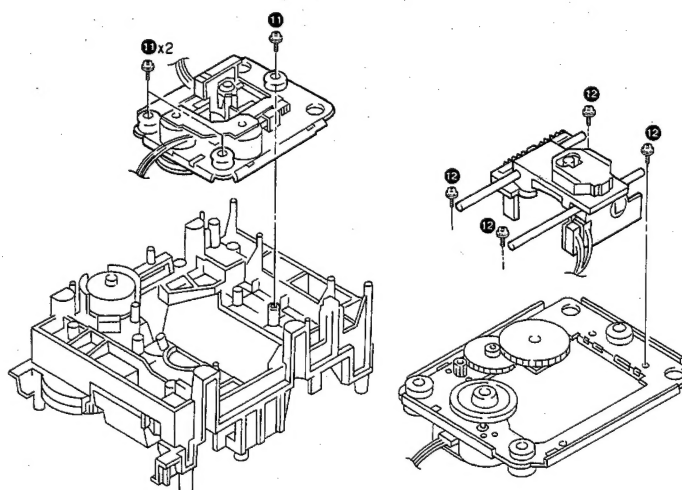
4. How to mount the tray

1. Turn the gear fully clockwise (9).
2. Insert the tray while pressing the 2 catches (10).

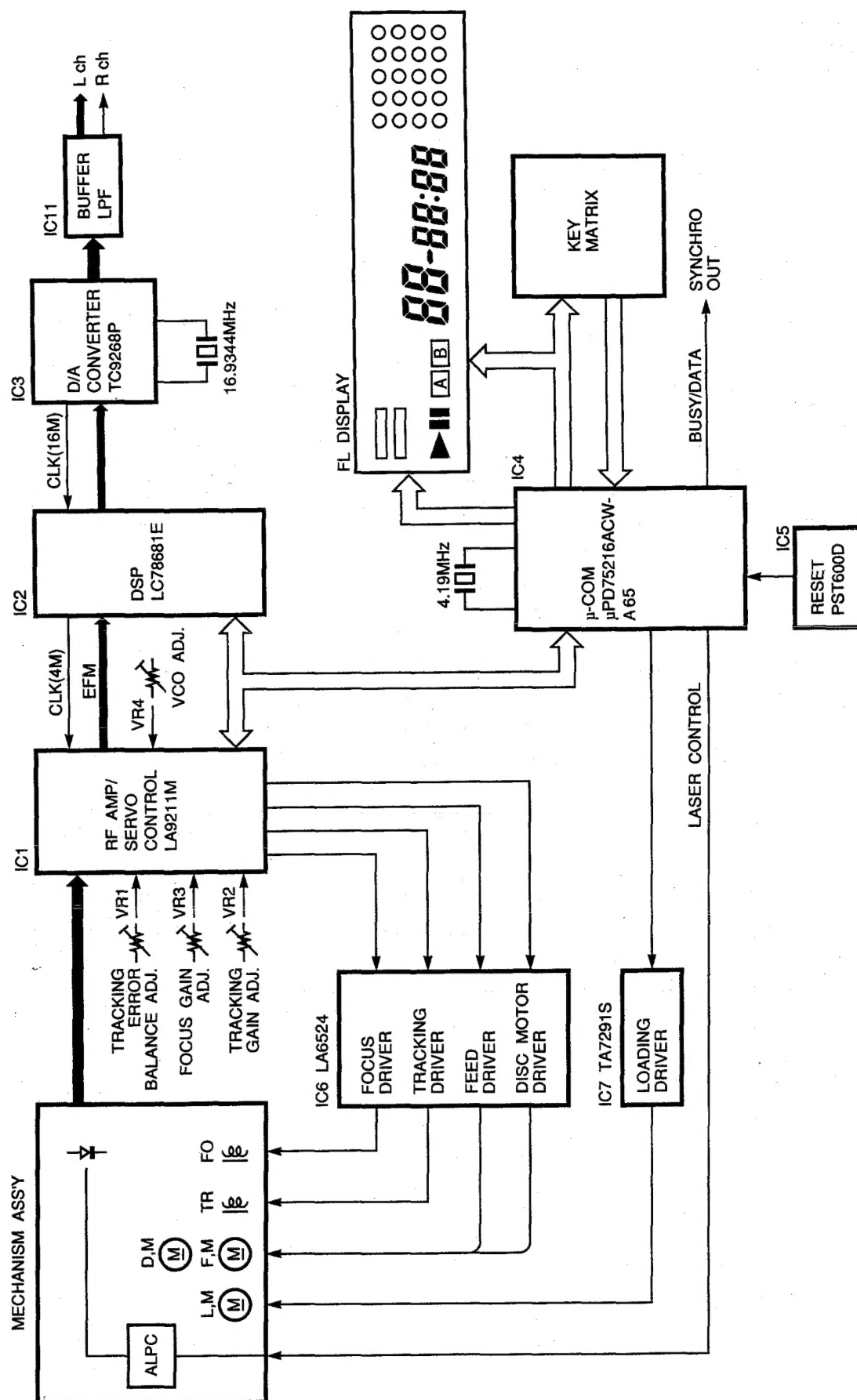


5. Removing the pickup

1. Remove the 3 screws (11), then remove the pickup mechanism ass'y.
2. Remove the 4 screws (12), then remove the pickup.



BLOCK DIAGRAM

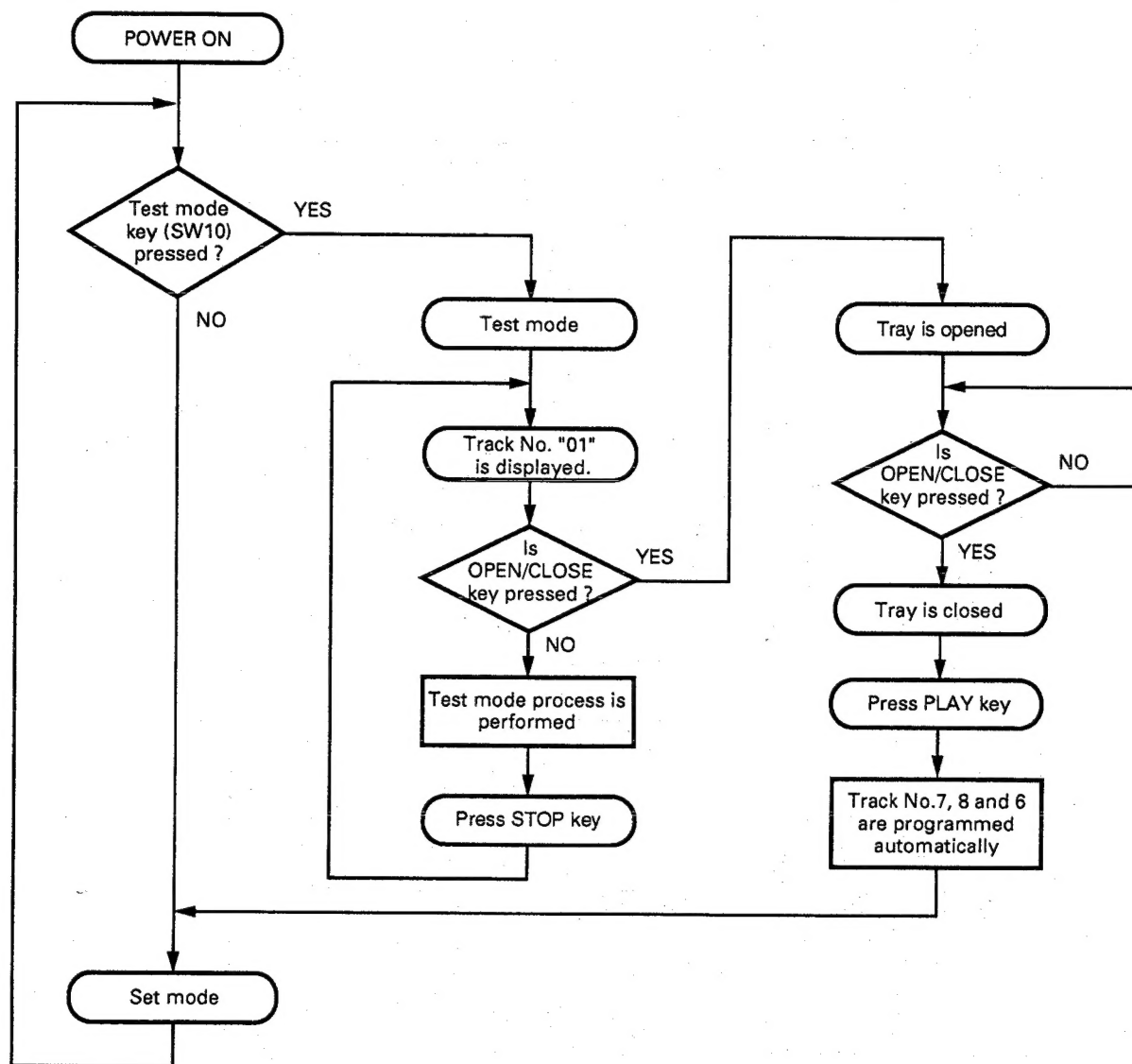


CIRCUIT DESCRIPTION

1. Test mode

1-1. Setting the test mode

This microprocessor built in this unit can be put to TEST MODE (SW10).



CIRCUIT DESCRIPTION

1-2. Key and functions valid in test mode

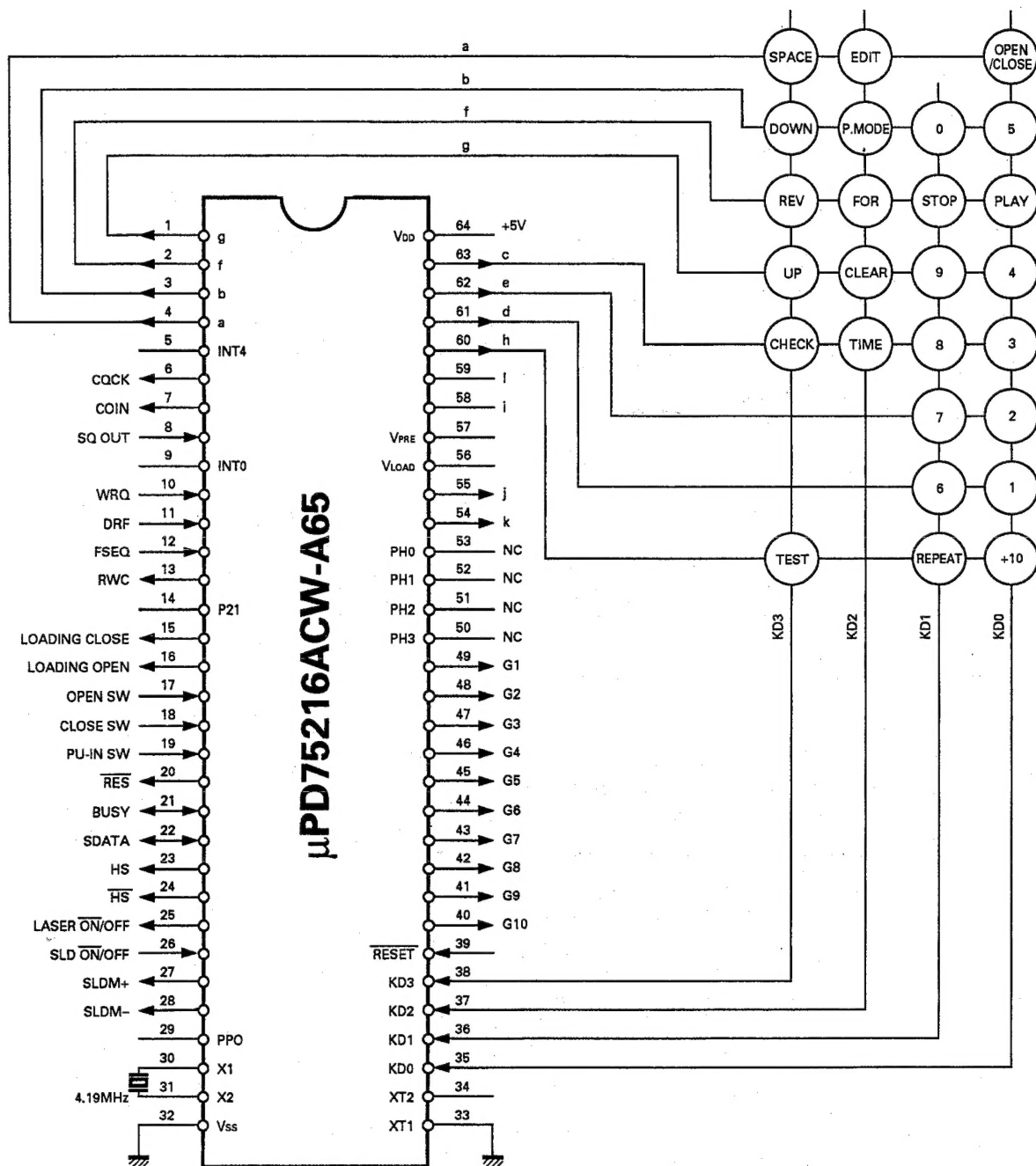
No.	Input key	Function	Track No. display																																			
1	PLAY	(1) Focusing servo ON (2) Tracking servo ON (3) Feed vervo ON	TRACK NO. 05 ↓ Displayed for a few seconds after completion (1), (2) and (3). ↓ Disc Track No. is displayed.																																			
2	CHECK or Number "0" key	(1) Focusing servo ON (2) Tracking servo OFF (3) Feed servo OFF	TRACK NO. 03																																			
3	STOP	(1) Focusing servo OFF (2) Tracking servo OFF (3) Feed servo OFF	TRACK NO. 01																																			
4	▶▶	In the STOP mode, moves the pickup slightly toward the outer position of disc. When feed servo is ON, sets the track gain to "H".	-																																			
5	◀◀	In the STOP mode, moves the pickup slightly toward the inner position of disc. When feed servo is ON, sets the track gain to "L".	-																																			
6	UP ▶▶	Turns all FL display lamps ON.	TRACK NO. 88																																			
7	DOWN ◀◀	Turns all FL display lamps OFF. "TRACK NO." is lighted.	TRACK NO. 88																																			
8	+10	Playback Track No.1 under High-speed mode (If not open tray, SPACE key function is available.)	-																																			
9	SPACE	Set playback mode to High-speed or Normal.	-																																			
10	P. MODE	Track No. 7,8, and 6 (High-speed) are programmed and playback from Track No.7. The test mode is canceled.	-																																			
11	OPEN/CLOSE	When the tray is opened then closed. Track No. 7, 8, and 6 are programmed and set is in STOP mode. The test mode is canceled.	TRACK NO. 00																																			
12	Numeric key (1 ~ 9)	Jumps tracks as shown below. <table border="1"><tr><td>Key</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Number of tracks</td><td>1</td><td>4</td><td>128</td><td>512</td><td>1000</td></tr><tr><td>Direction</td><td colspan="5">Outer</td></tr><tr><td>Key</td><td>6</td><td>7</td><td>8</td><td>9</td><td rowspan="2"></td></tr><tr><td>Number of tracks</td><td>1</td><td>4</td><td>128</td><td>512</td></tr><tr><td>Direction</td><td colspan="5">Inner</td></tr></table>	Key	1	2	3	4	5	Number of tracks	1	4	128	512	1000	Direction	Outer					Key	6	7	8	9		Number of tracks	1	4	128	512	Direction	Inner					-
Key	1	2	3	4	5																																	
Number of tracks	1	4	128	512	1000																																	
Direction	Outer																																					
Key	6	7	8	9																																		
Number of tracks	1	4	128	512																																		
Direction	Inner																																					
13	REPEAT	(1) Tray Opened (2) Laser ON The REPEAT function is canceled when the tray is closed by pressing the tray. "REPEAT" figures is lighted.	TRACK NO. 02																																			

REPEAT mode : Press "REPEAT" key → Press "OPEN/CLOSE" key → Press "REPEAT" key...

CIRCUIT DESCRIPTION

2. Microprocessor : μ PD75216ACW-A65 (IC4)

2-1. Terminal connection diagram

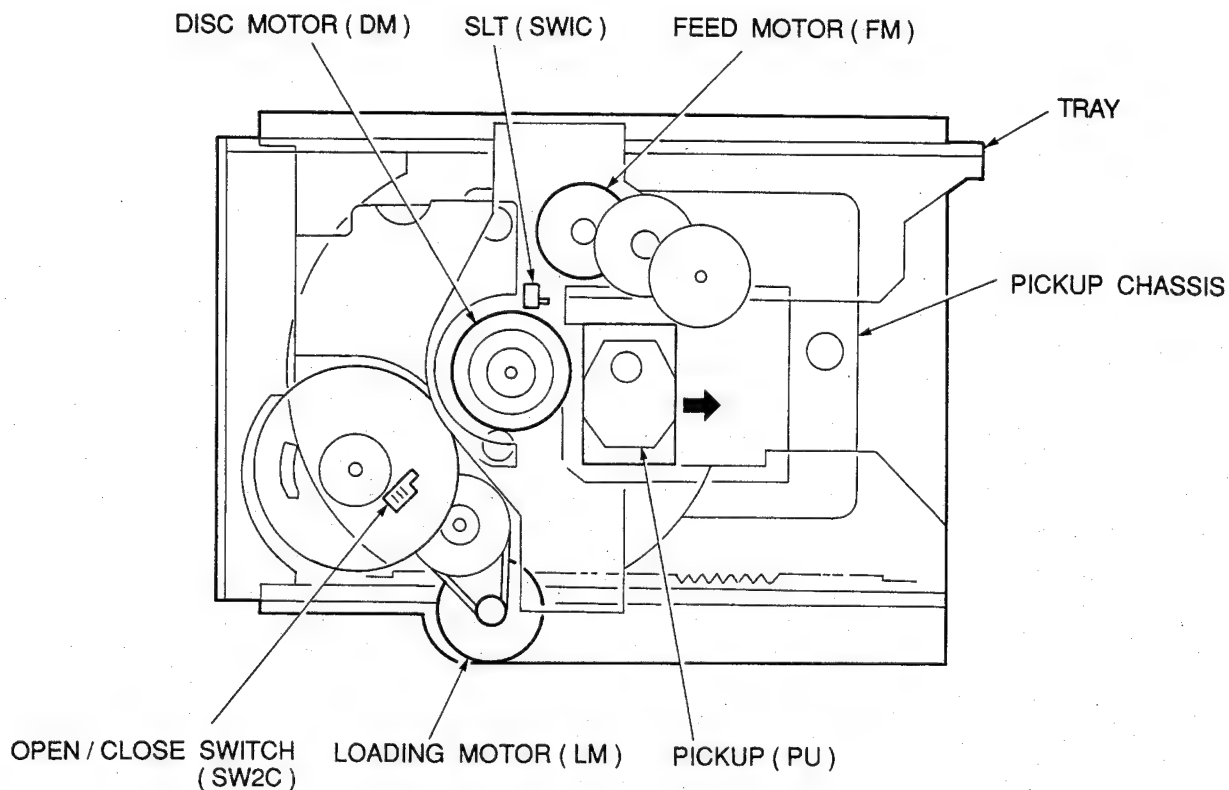


CIRCUIT DESCRIPTION

2-2. Pin function

No.	Pin name	I/O	Function
1~4	g, f, b, a	O	Fluorescent indicator segment.
5	INT4	—	GND
6	CQCK	O	DSP IC CQCK terminal.
7	COIN	O	DSP IC COIN terminal.
8	SQ OUT	I	DSP IC SQ OUT terminal.
9	INT0	—	GND
10	WRQ	I	DSP IC WRQ terminal.
11	DRF	I	LA9211M DRF terminal.
12	FSEQ	I	DSP IC FSEQ terminal.
13	PWC	O	DSP IC RWC terminal.
14	P21	—	GND
15	LOADING CLOSE	O	Tray close signal output.
16	LOADING OPEN	O	Tray open signal output.
17	OPEN SW	I	Tray open detection signal input.
18	CLOSE SW	I	Tray close detection signal input.
19	PU-IN SW	I	Pick up limit signal input.
20	RES	O	DSP IC reset signal output.
21	BUSY	I/O	System control signal (BUSY).
22	SDATA	I/O	System control signal (DATA).
23	HS	O	High speed control.
24	HS	O	High speed control.
25	LASER ON/OFF	O	Laser ON/OFF control signal output.
26	SLD ON/OFF	I	Feed motor ON/OFF signal input.
27	SLD +	O	Feed motor control signal output.
28	SLD -	O	Feed motor control signal output.
29	PPO	—	No connected.
30	X1	I	Oscillator signal input.
31	X2	O	Oscillator signal output.
32	Vss	—	GND
33	XT1	—	GND
34	XT2	—	No connected.
35~38	KD0~KD3	I	Key input signal.
39	RESET	I	Reset signal input.
40~49	G10~G1	O	Fluorescent indicator tube grid signal output.
50~53		—	GND
54, 55	k, j	O	Fluorescent indicator segment.
56	VLOAD	—	FL pull down resistor power supply (−30V).
57	VPRE	—	FL driver circuit power supply (−6V).
58~63	i, l, h, d, e, c	O	Fluorescent indicator segment.
64	VDD	—	Power supply (+5V).

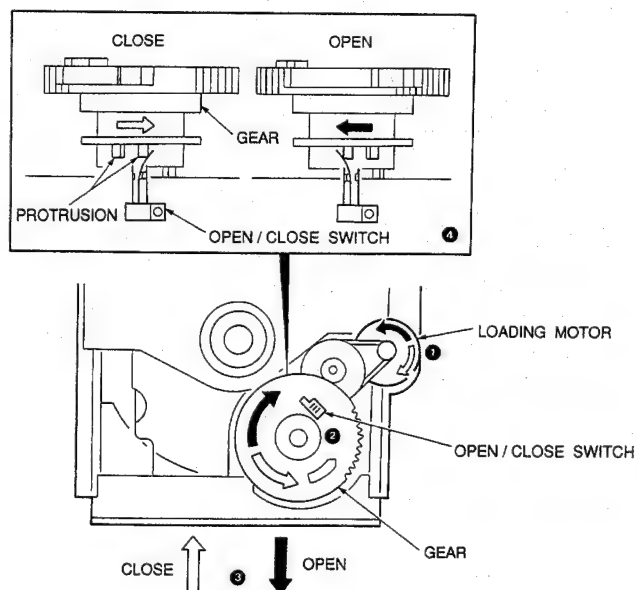
MECHANISM OPERATION DESCRIPTION



1. Tray OPEN/CLOSE operation

By the rotation of the motor (①), the gear (②) is rotated and the tray starts OPEN/CLOSE operation (③).

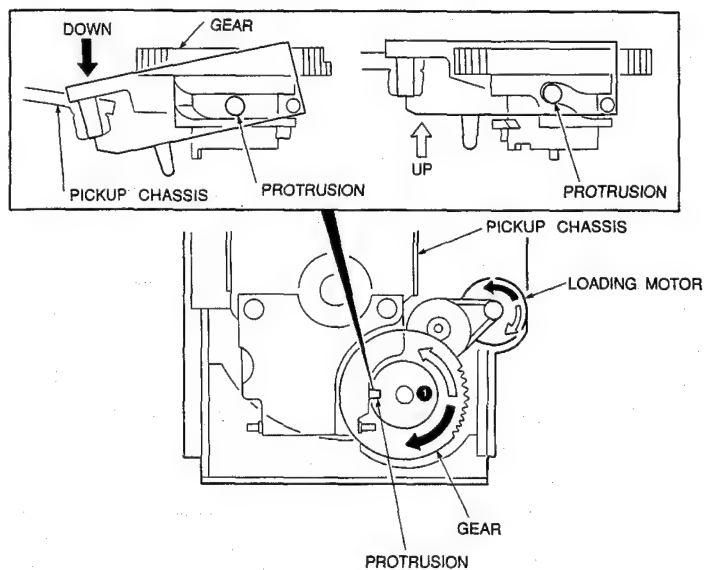
The OPEN/CLOSE operation stops when the protrusion of the gear comes in contact with the detection switch (④).



MECHANISM OPERATION DESCRIPTION

2. Pickup chassis UP/DOWN operation

Accompanied with the OPEN/CLOSE operation, the pickup chassis moves up and down along with the grooves in the gear (1).



ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
1	VCO	Test disc Type 4	Connect the frequency counter to "VCO" and GND.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the STOP key. Then, confirm that the display is "01"	VR4	4.24MHz \pm 15kHz	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect the oscillo- scope to "T.ER".	Press the OPEN/CLOSE key to open the tray. Reset to TEST mode Then, press the CHECK key. Confirm that the display is "03".	VR1	Symmetry between upper and lower patterns, or DC=0 \pm 0.05V	(b)
3	FOCUS GAIN	Test disc Type 4 Apply signal of 1kHz, 0.5Vrms to R61(F.P. - F.E.).	Connect a LPF to R61 (F.P. - F.E.), to which connect two AC volt- meters.	Press the PLAY key Confirm that the display is "05".	VR3	Two VTVMs should read the same value.	(c)
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1kHz, 0.5Vrms to R63(T.P. - T.E.).	Connect a LPF to R63 (T.P. - T.E.), to which connect two AC volt- meters.	Press the PLAY key Confirm that the display is "05".	VR2	Two VTVMs should read the same value.	(d)
5	H.F. LEVEL CONFIRMATION	Test disc Type 4	Connect the oscillo- scope to "H.F.".	Press the PLAY key Confirm that the display is "05".	—	1.5Vp-p ~ 2.5Vp-p	(e)

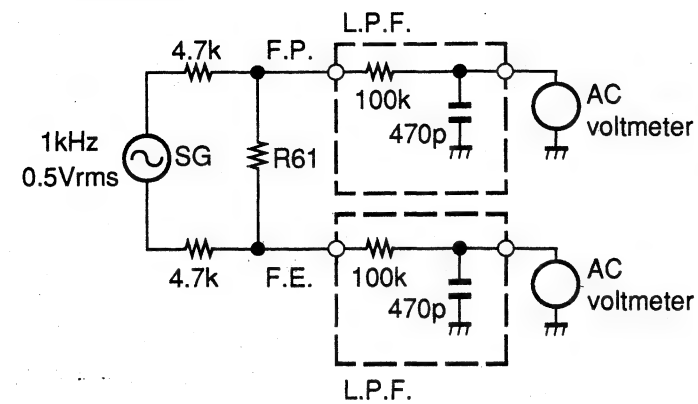
(NOTE) Type 4 disc : SONY YEDS-18 TEST DISC or equivalent.

Adjustment procedures are in TEST MODE.

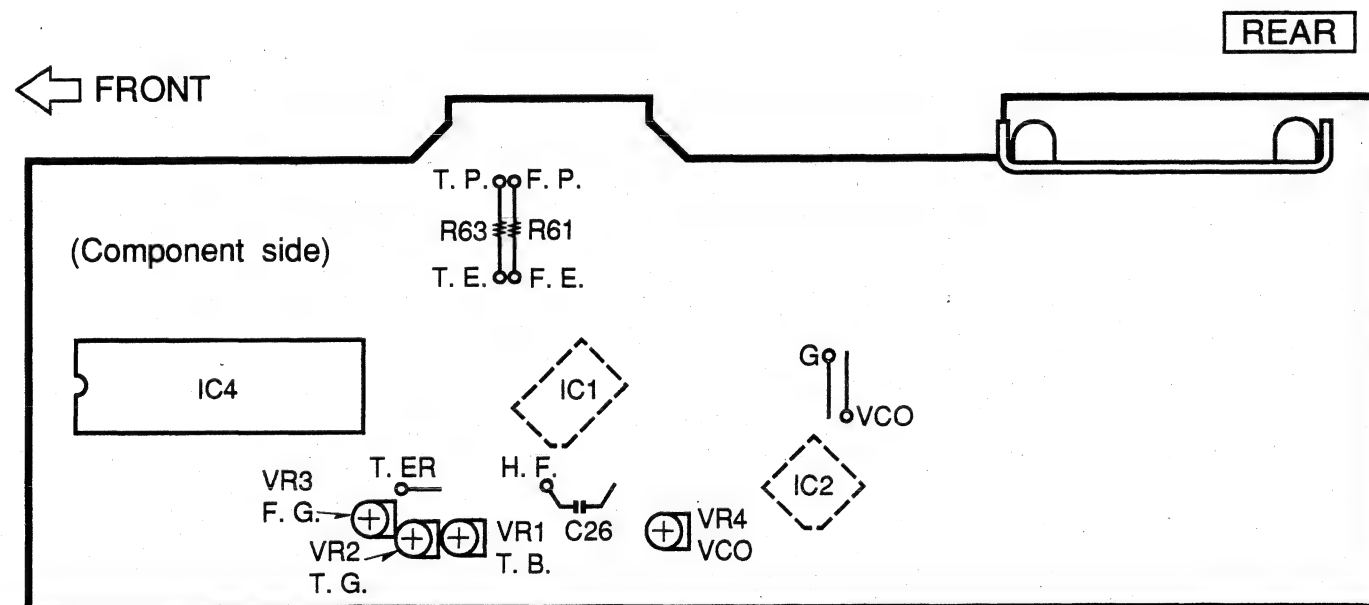
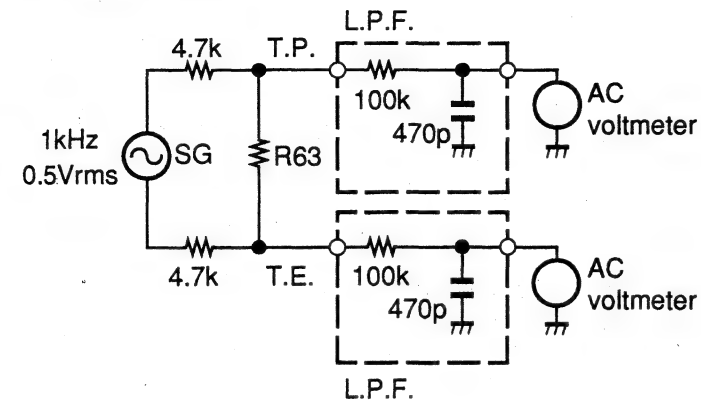
DP-470 DP-470

ADJUSTMENT

(c) Focus gain

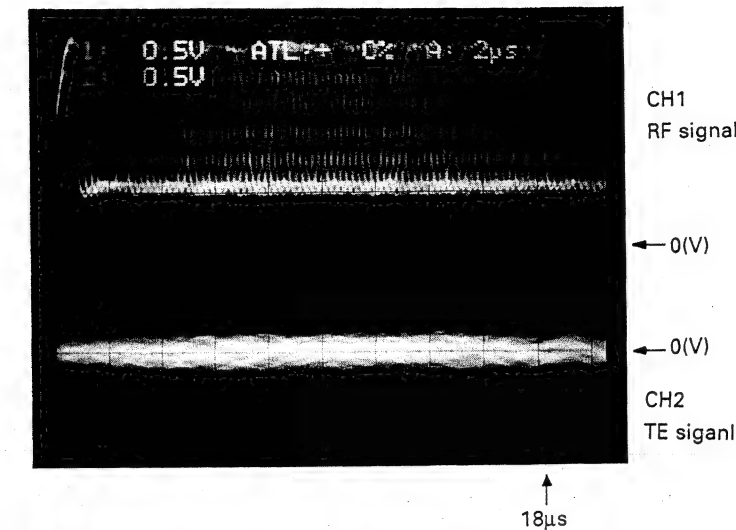


(d) Tracking gain



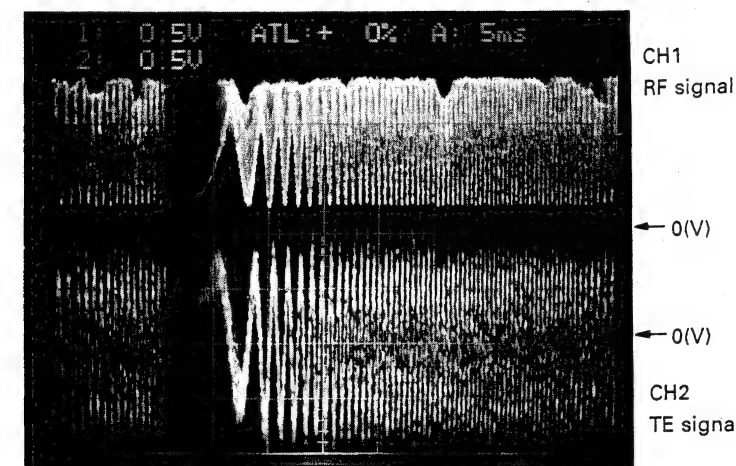
ADJUSTMENT

RF level, TE waveform



- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 18μs after RF signal, in the form of a projection.

(b) Tracking error balance

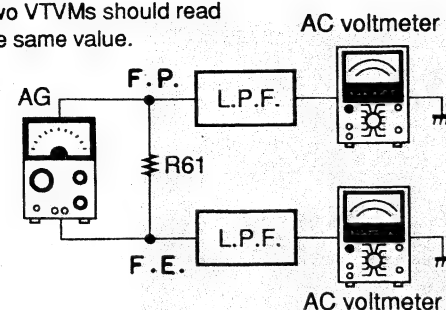


- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V. (VR 1)

PC BOARD (COMPONENT SIDE VIEW)

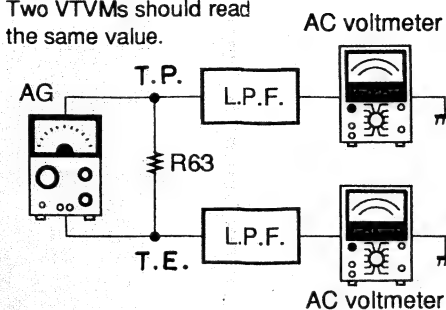
(c) Focus gain :

Two VTVMs should read the same value.

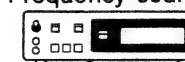


(d) Tracking gain :

Two VTVMs should read the same value.



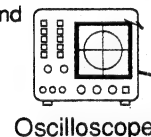
Frequency counter



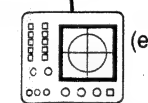
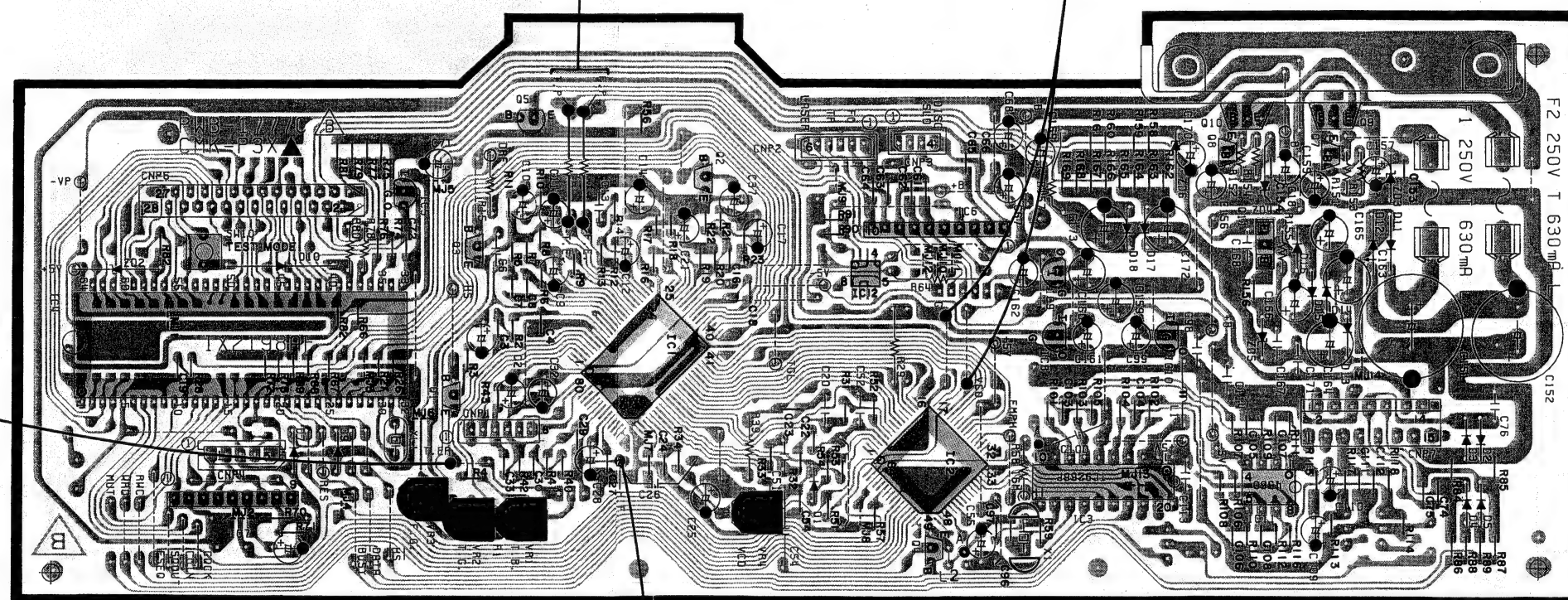
(a) VCO : 4.24MHz \pm 15kHz

(b) Tracking error balance :

Symmetry between upper and lower patterns, or
DC=0 \pm 0.05V

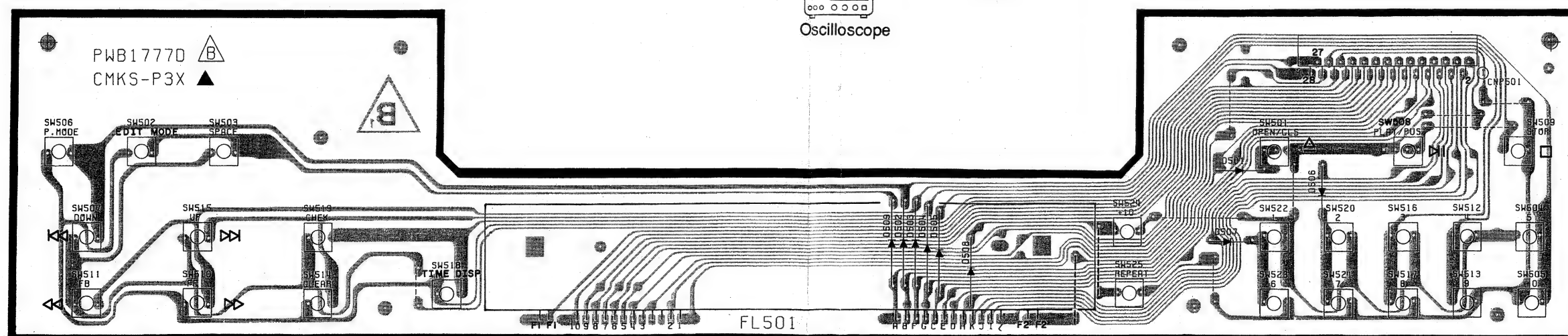


Oscilloscope



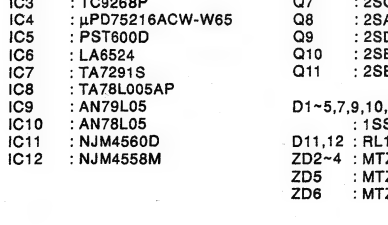
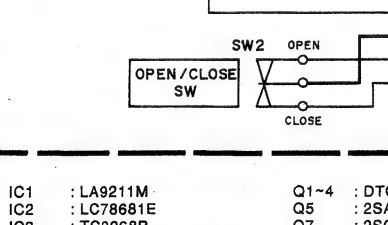
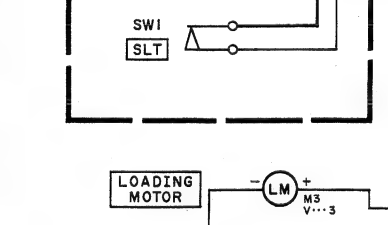
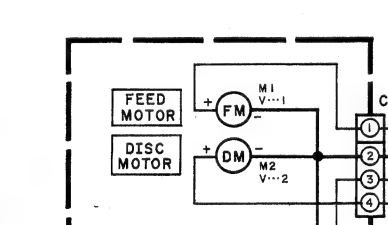
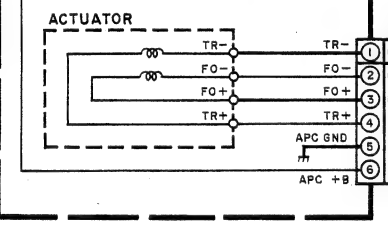
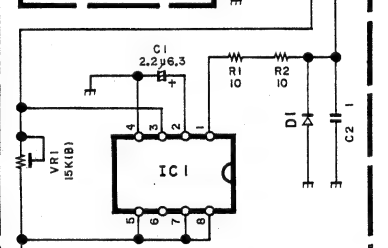
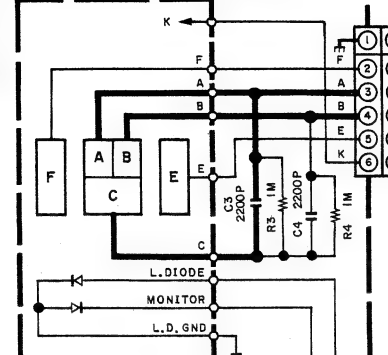
Oscilloscope

(e) H.F. Level confirmation :
1.5Vp-p ~ 2.5Vp-p



MECHANISM ASS'Y

HOLOGRAM LASER UNIT (PICK UP)



MAIN UNIT

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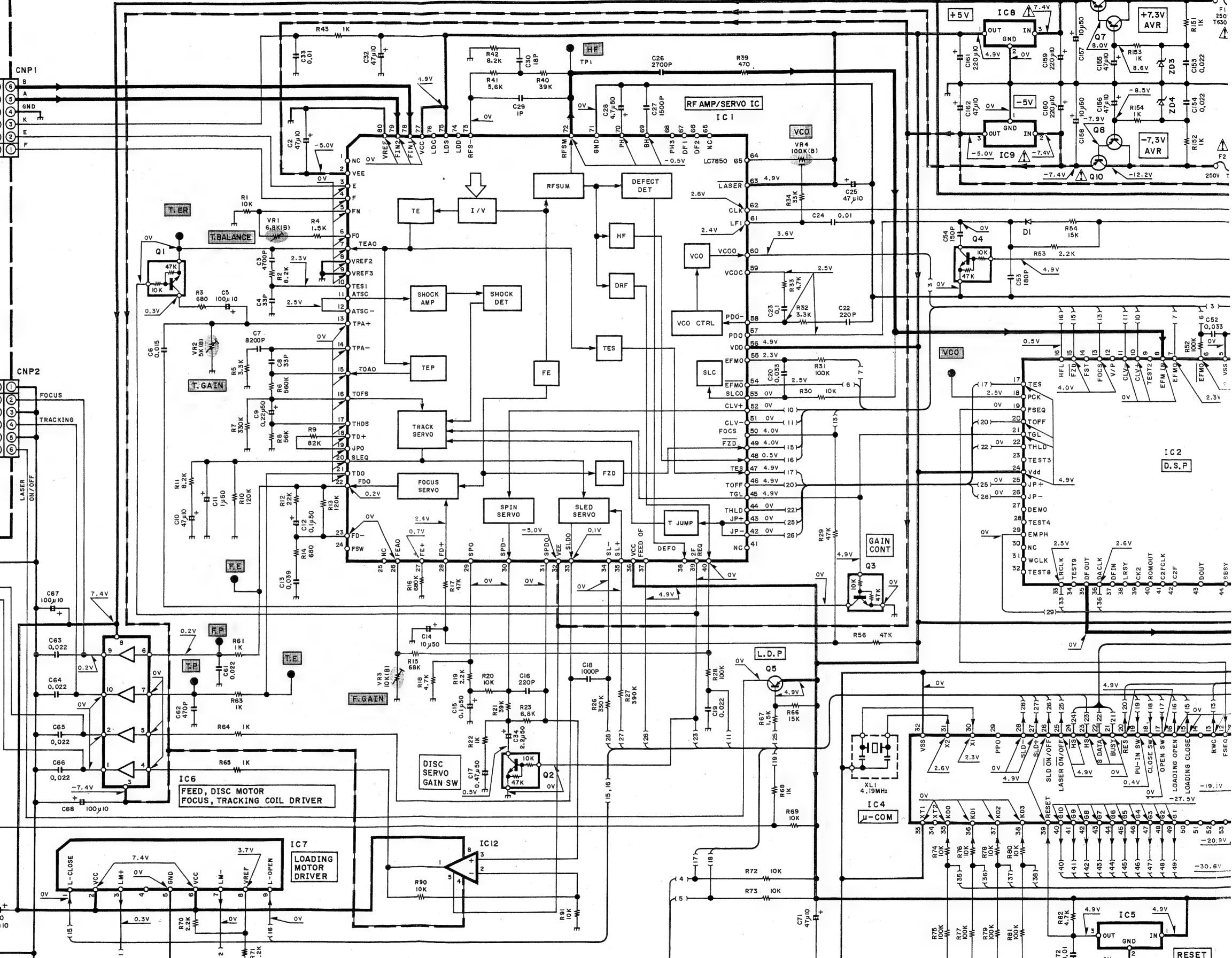
MAIN UNIT

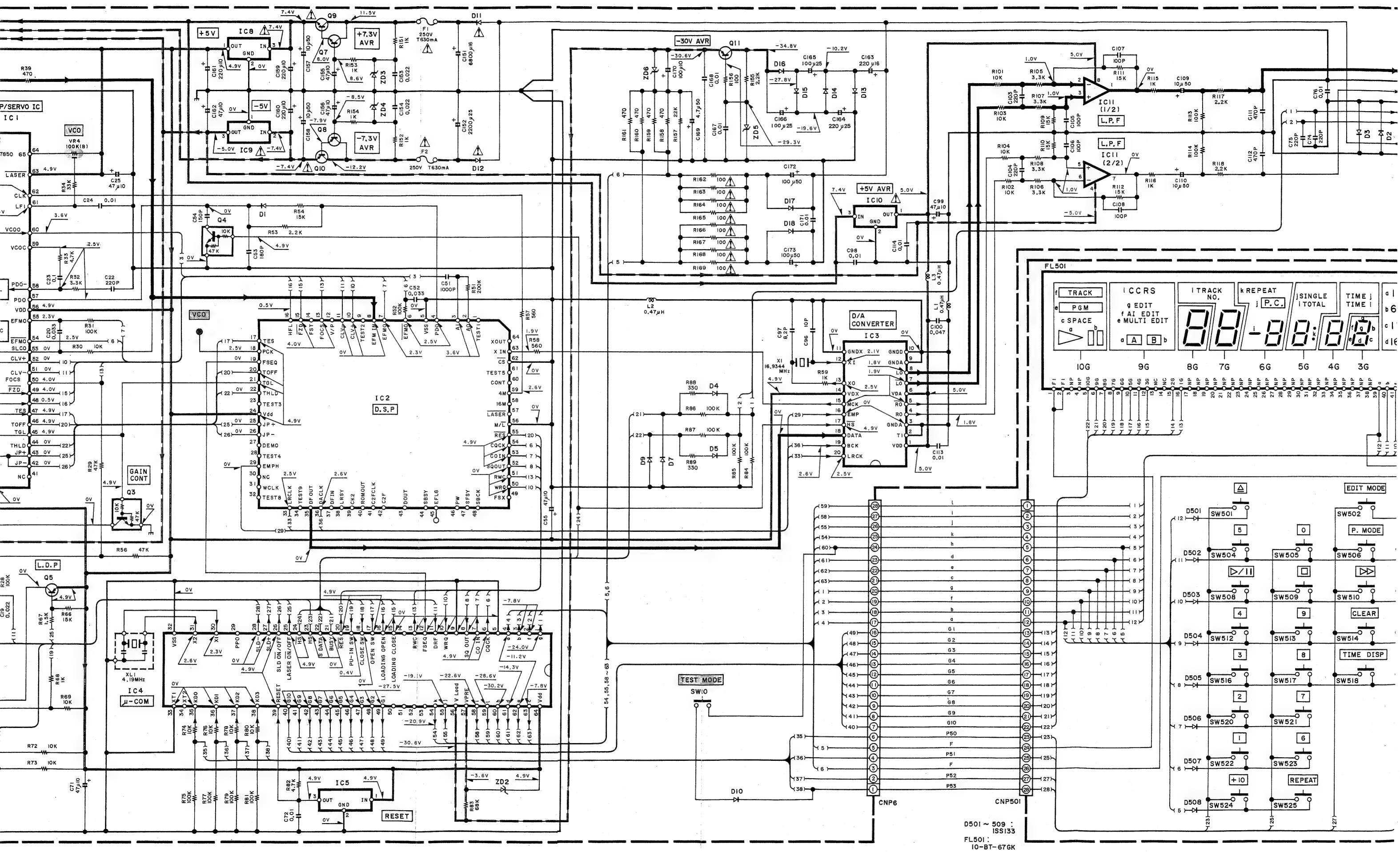
MAIN UNIT

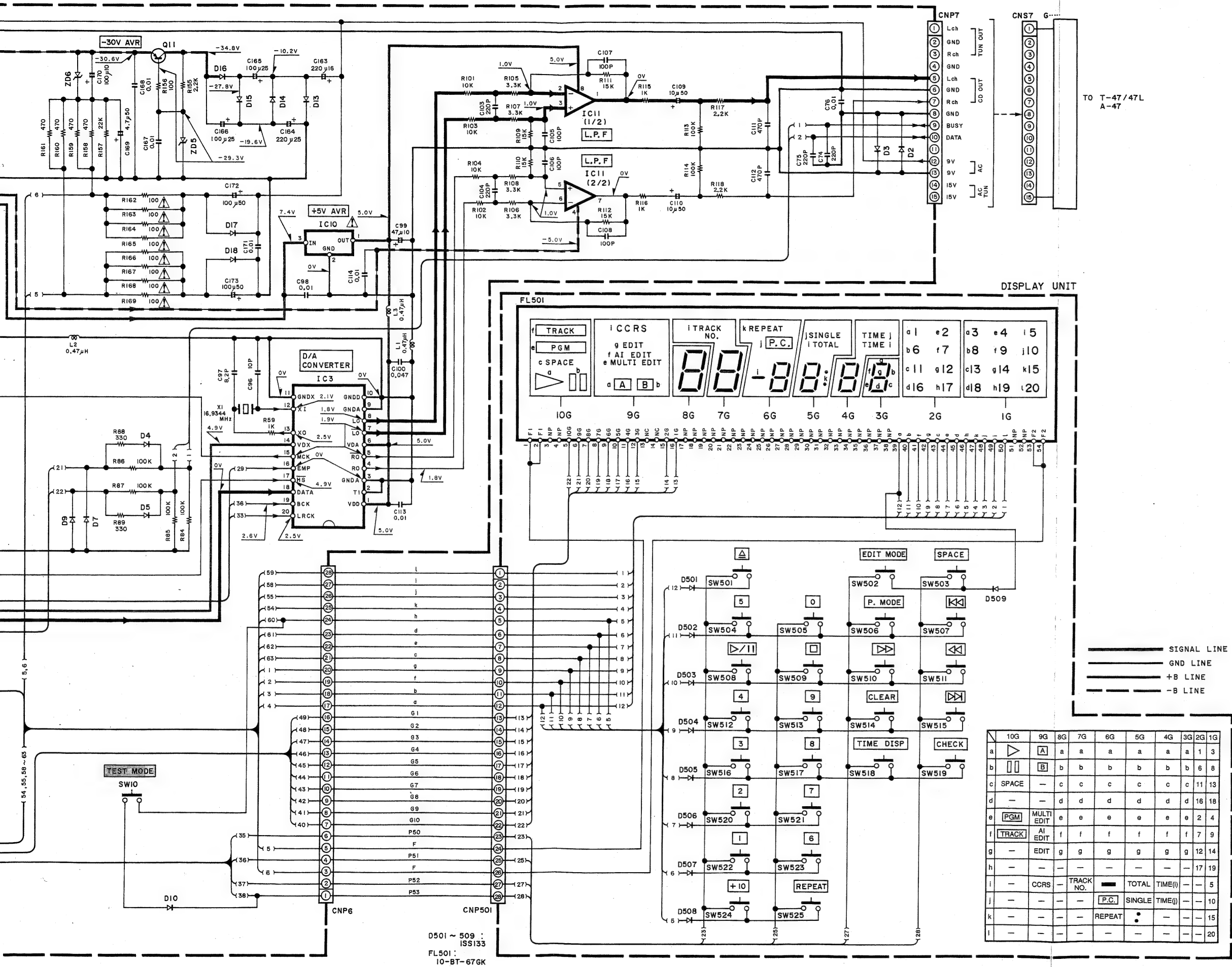
- IC1 : LA9211M
- IC2 : LC78681E
- IC3 : TC9268P
- IC4 : μ PD75216ACW-W65
- IC5 : PST600D
- IC6 : LA6524
- IC7 : TA7291S
- IC8 : TA78L005AP
- IC9 : AN79L05
- IC10 : AN78L05
- IC11 : NJM4560D
- IC12 : NJM4558M

- Q1-4 : DTC114YS
- Q5 : 2SA1015GR
- Q7 : 2SC1740SR
- Q8 : 2SA933SR
- Q9 : 2SD2012
- Q10 : 2SB1375
- Q11 : 2SB1237R3

- D1-5,7,9,10,13-18 : 1SS133
- D11,12 : RL104T
- ZD2-4 : MTZ9.1A
- ZD5 : MTZJ30B
- ZD6 : MTZJ6.8B



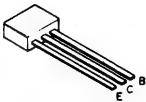




D501 ~ 509 :
ISS133
FL501 :
10-BT-67GK

DP-470 (K)

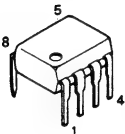
DTC114YS



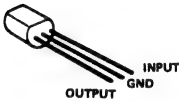
2SB1375
2SD2012



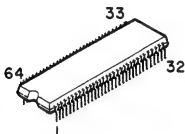
NJM4560D



TA78L005AP



UPD75216ACW-A65



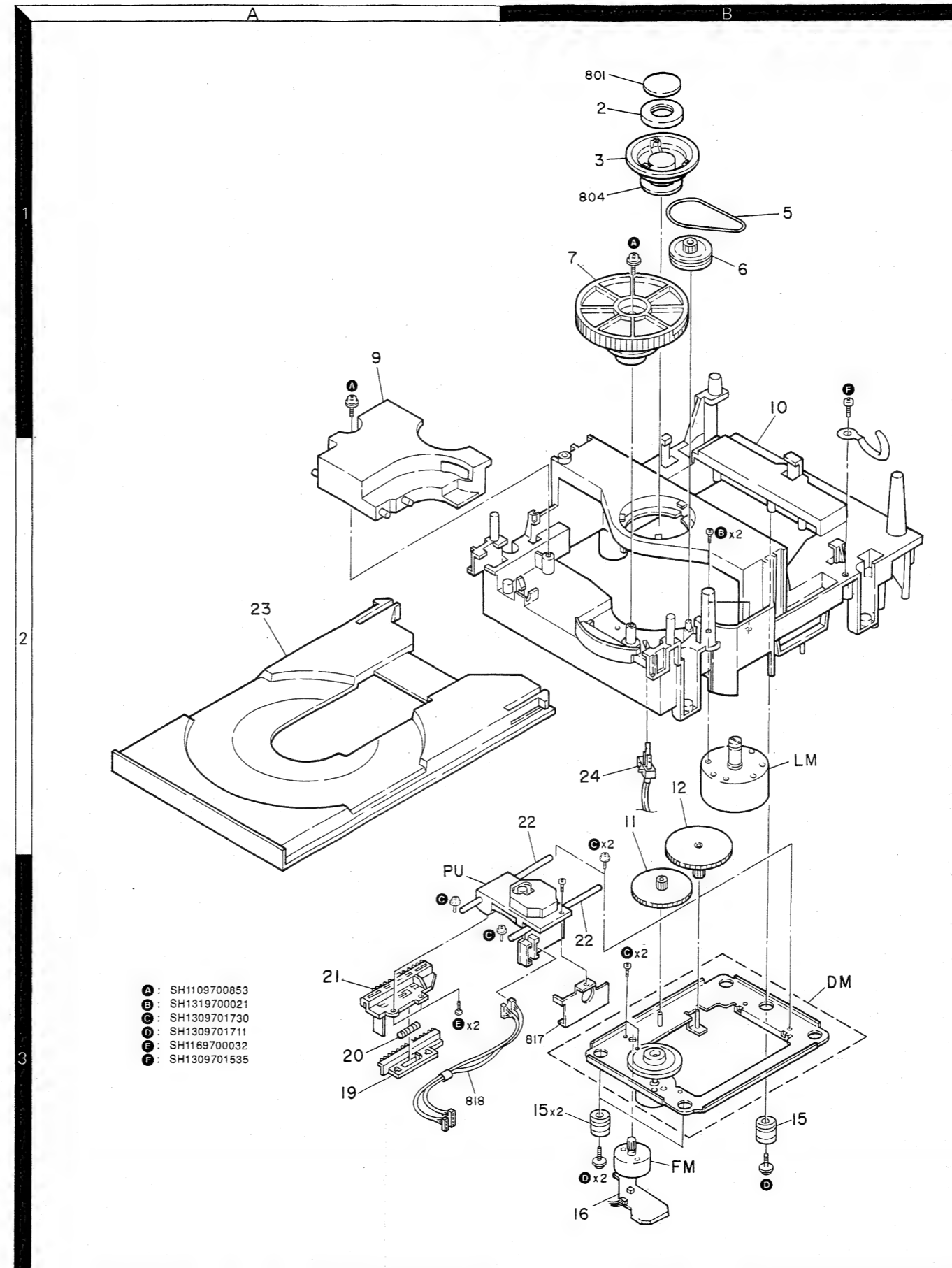
• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DP-470
KENWOOD

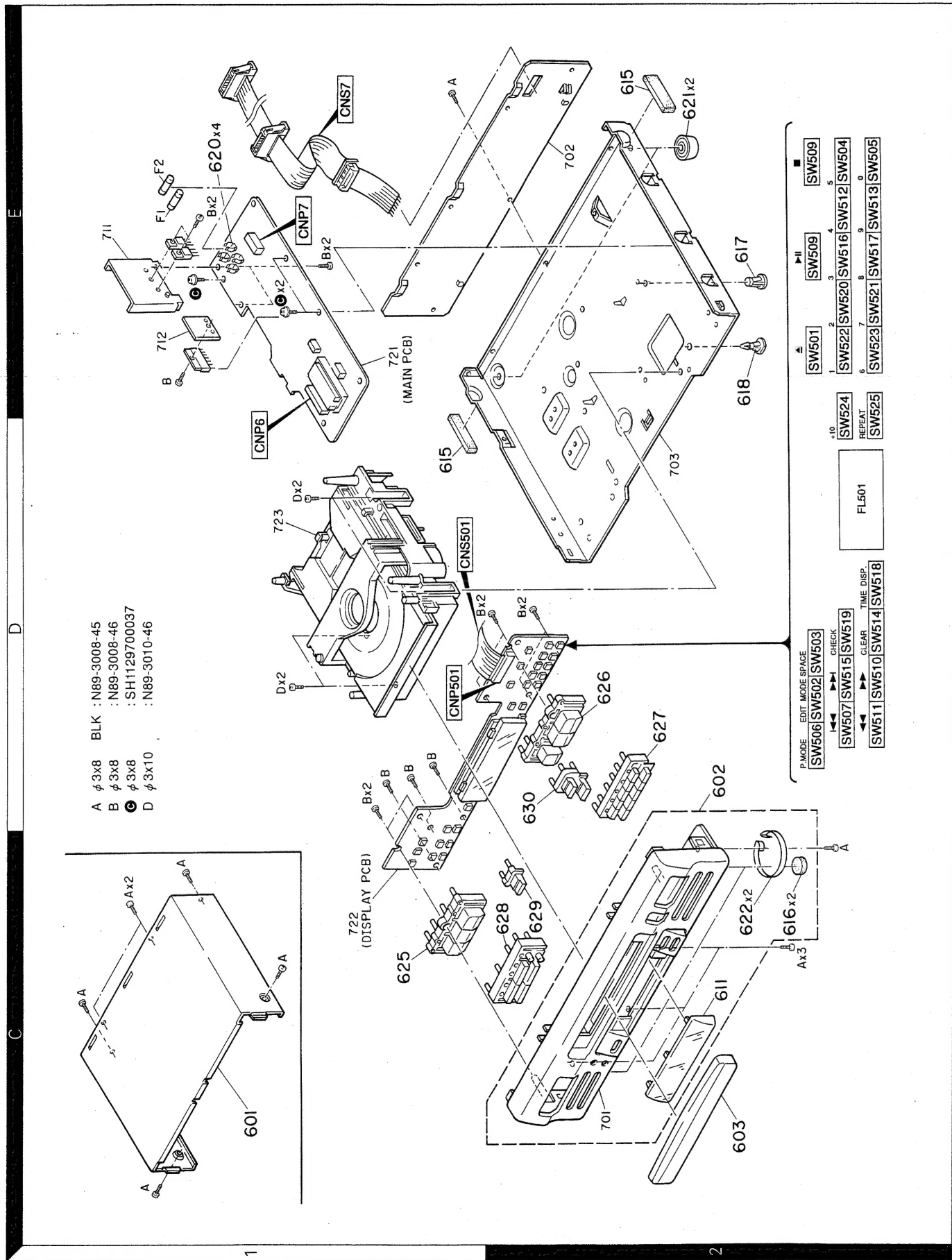
Y22-3492-70

EXPLODED VIEW (MECHANISM)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

Ref. No.	Address	Parts No.	Description	Destination
601	1C	A01-3118-08	CABINET TOP	
602	2D	A60-0555-08	FRONT PANEL ASSY	
603	2C	SH1101100584	PANEL TRAY	
611	2C	B10-2015-08	PANEL WINDOW	
615	1D, 2E	B46-0096-33	WARRANTY CARD	
616	2C	G10-0199-08	CUSHION CHASSIS	
617	2E	SH1103260268	CUSHION	
618	2E	H10-5730-08	POLYSTYRENE FOAMED FIXTURE(L)	
619	2E	H10-5731-08	POLYSTYRENE FOAMED FIXTURE(R)	
620	1E	H50-0827-08	ITEM CARTON CASE	
621	2E	H50-0828-08	ITEM CARTON CASE	
622	2C	SH1101560798	PAD	
625	1C	K29-5883-08	PROTECTION BAG(UNIT)	
626	2D	SH1109060121	SPACER PWB	
627	2D	SH1104130267	BRACKET PWB	
628	2C	SH1102140449	FUSE HOLDER	
629	2C	SH1105160005	LEG(REAR)	
630	2D	SH1101230060	INSULATOR	
631	1C	K29-5883-08	KN08(MODE)	
632	2D	K29-5884-08	KN08(PLAY/EJECT)	
633	2C	K29-5885-08	KN08(10-key)	
634	2C	K29-5886-08	KN08(SKIP)	
635	2D	K29-5887-08	KN08(DISPLAY)	
636	2D	K29-5888-08	KN08(REPEAT)	
637	A	N89-3008-45	SCREW	
638	B	N89-3008-46	SCREW	
639	C	SH1129700037	SCREW	
640	D	N89-3010-46	SCREW	
641		CE04KW1A470M	ELECTRO	
642		SH1305900678	CYLND CHIP C 4700PF	
643		CC41DSL1H330J	CYLND CHIP C 33PF	
644		CE04KW1A101M	ELECTRO	
645		SH1305900683	CYLND CHIP C 100UF	
646		SH1105950092	CYLND CHIP C 8200PF	
647		CC41DSL1H330J	CYLND CHIP C 33PF	
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649		CE04KW1A470M	ELECTRO	
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652		SH1305900642	CYLND CHIP C 0.039UF	
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820		CE04KW1H010M	ELECTRO	
821		CE04KW1H010M	ELECTRO	
822		CE04KW1H010M	ELECTRO	

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕	Re- marks 備考
△ F1 , 2			F05-6313-05	FUSE(250V T630mA)		
X1		*	L77-2132-08	CRYSTAL REZONATOR(16.9344MHz)		
XL1			L78-0267-05	REZONATOR(4.19MHz)		
VR1		*	R12-2048-08	TRIMMING POT. 6.8K(T. BALANCE)		
VR2			R12-1619-05	TRIMMING POT. 4.7K(T. GAIN)		
VR3			R12-3685-05	TRIMMING POT. 10K(F. GAIN)		
VR4			R12-5651-05	TRIMMING POT. 100K(VCO)		
SW10			SH1305301218	TACT SWITCH(TEST MODE)		
SW501-525			SH1305301218	TACT SWITCH(EJECT etc.)		
D1 -5			1SS133	DIODE		
D7			1SS133	DIODE		
D9 , 10			1SS133	DIODE		
D11 , 12			RL104T	DIODE		
△ D13 -18			1SS133	DIODE		
D501-509			1SS133	DIODE		
FL501			10-BT-676K	INDICATOR TUBE		
IC1		*	LA9211M	IC(RF AMP/SERVØ)		
IC2		*	LC78681E	IC(D. S. P.)		
IC3		*	TC9268P	IC(O/A CONVERTOR)		
IC4		*	UP075216ACW-A65	IC(MICROPROCESSOR)		
IC5		*	PST6000	IC(RESET)		
IC6		*	LA6524	IC(DRIVER)		
IC7			TA7291S	IC(BRIDGE DRIVER)		
△ IC8			TA78L005AP	IC(VOLTAGE REGULATOR/ +5V)		
△ IC9		*	AN79L05T	IC(VOLTAGE REGULATOR/ -5V)		
△ IC10		*	AN78L05T	IC(VOLTAGE REGULATOR/ +5V)		
IC11			NJM4560D	IC(OP AMP X2)		
Q1 -4			DTC114YS	DIGITAL TRANSISTOR		
Q5			2SA1015GR	TRANSISTOR		
Q7			2SC1740SR	TRANSISTOR		
Q8			2SA933SR	TRANSISTOR		
Q9			2SD2012	TRANSISTOR		
△ Q10			2SB1375	TRANSISTOR		
△ Q11			2SB1237R3	TRANSISTOR		
ZD2 -4			MTZ9-1A	ZENER DIODE		
ZD5			MTZJ30BT	ZENER DIODE		
ZD6			MTZJ6-8B	ZENER DIODE		
MECHANISM ASSY						
2	1B		SH1313730001	MAGNET		
3	1B	*	T50-1067-08	BRACKET MAGNET		
5	1B	*	D16-0362-08	BELT DRIVE		
6	1B	*	D15-0364-08	PULLEY DRIVE		
7	1B	*	SH1102810098	GEAR PINION		
9	1A	*	SH1102480607	SHIFT LEVER		
10	1B	*	A11-1021-08	CHASSIS LOADING		
11	2B		SH1302810228	GEAR(MIDDLE)		
12	2B		SH1302810229	GEAR(DRIVE)		
15	3B		SH1303260448	CUSHION		
16	2B		SH1305301248	PUSH SWITCH(SLT)		
19	3A		SH1302810229	GEAR(RACK MOVE)		
20	3A		SH1252560244	SPRING(RACK)		

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas

△ indicates safety critical components.

* New Parts

Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕	Re- marks 備考
21	3A		SH1302810231	GEAR(RACK FIX)		
22	3B		SH1302900394	SHAFT(GUIDE)		
23	2A	*	SH1102140395	DISC TRAY		
24	2B	*	S74-0027-08	SWITCH(OPEN/CLOSE)		
A		*	SH1109700853	SCREW		
B			SH1319700021	SCREW		
C			SH1309701730	SCREW		
D			SH1309701711	SCREW		
E		*	SH1169700032	SCREW		
F			SH1309701535	SCREW		
DM	3B	*	T42-0658-08	DISC MOTOR ASSY		
FM	3B	*	T42-0657-08	SLIDE MOTOR WITH GEAR		
LM	2B	*	SH1106300200	MOTOR WITH PULLEY		
PU	3A	*	T25-0032-08	PICKUP		

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas

△ indicates safety critical components.

DP-470

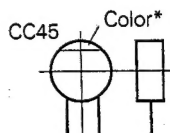
PARTS LIST

PARTS LIST

CAPACITORS

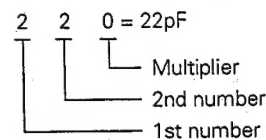
CC 45 TH 1H 220 J
1 2 3 4 5 6

- 1 = Type ... ceramic, electrolytic, etc. 4 = Voltage rating
2 = Shape ... round, square, ect. 5 = Value
3 = Temp. coefficient 6 = Tolerance



Capacitor value

- 010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF



Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF -10 ~ +50 Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

Voltage rating

2nd word 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

Chip capacitors

- (EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)
- (EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)
- Refer to the table above.
- 1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

Chip resistor (Carbon)

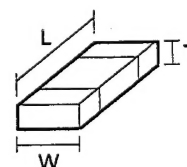
- (EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B, F)

Carbon resistor (Normal type)

- (EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

- 1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension



Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

DP-470

SPECIFICATIONS

Format

System Compact disc digital audio system
Laser Semiconductor laser
Number of channels 2 channels
Playing rotation 200rpm~500rpm (CLV)

D/A converters

D/A conversion 1 Bit
Oversampling 8fs (352.8kHz)

Audio

Frequency response 8Hz~20kHz, ± 1.0 dB
Signal to noise ratio More than 94dB

Dynamic range More than 92dB
Total harmonic distortion Less than 0.005%
Channel separation More than 83dB
Wow & flutter Unmeasurable limit
Output level/impedance
Fixed 1.2V/3.3k Ω

General

Dimensions W : 360mm
H : 94mm
D : 307mm
Weight (Net) 3.4kg

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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